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ABSTRACT

Reported research and analysis concerning competency tests required for high school graduation and concerning dropping out of school point to ambiguous hypotheses about the effects of graduation tests on early school leaving. A review of the literature indicates the existence of data on the process nature of dropping out, the centrality of academics in dropping out, and the complexity of dropout behavior. Research efforts on the impact on student attrition rates of minimum competency tests as graduation criteria confront problems in the widespread unavailability, spotty nature, and incomparability of records kept on dropouts. Moreover, there appear to be significant differences across competency tests used for this purpose. In general, it appears that: (1) the effects of graduation tests are marginal across the general student population; (2) minorities have experienced high failure rates on initial examinations and re-tests; and (3) different testing systems are likely to have different effects on school continuation decisions. An analysis of data from 50 states illustrates the need for generally available adequate statistics describing the effects of graduation tests and standards changes on school completion behavior. (TJH)

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Center for Research on Evaluation,
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PROJECT: EFFECTS OF TESTING REFORMS AND STANDARDS

Toward researching the connections between tests required for high school graduation and the inclination to drop out of school

Study director: James Catterall

Grant Number: G008690003

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PRELIMINARY DRAFT *** FOR COMMENTS ONLY

TOWARD RESEARCHING THE CONNECTIONS BETWEEN TESTS REQUIRED FOR HIGH SCHOOL GRADUATION AND THE INCLINATION TO DROP OUT OF SCHOOL

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During the past fifteen years, 40 states have mandated standardized testing across their public schools and about half the states have instituted tests that must be passed before students are granted high school diplomas. A suspected but unexamined result of tests and other added standards for the high school diploma is their discouraging effect on school completion. About a fourth of our youngsters leave school without graduating, and the warning that recently legislated academic orientations may swell the ranks of dropouts has sounded repeatedly over recent years (Hamilton, 1986; McDill, Natriello, & Pallas, 1986; Business Advisory Commission of the Education Commission of the States, 1985; Edson, 1984).

An examination of available literature reveals that the these warnings remain just that: there is scant empirical evidence pertaining to relationships between standards or tests and ultimate graduation rates. At least three factors appear to

contribute to this paucity of research. First, many of the legislated standards are only beginning to affect students. For example, of 33 states legislating added course requirements for high school graduation between 1980 and 1985, only 7 applied the new standards to 1986 or earlier graduating classes (Center for Statistics, 1986). Second, we have only begun to probe the nature of the "Omnibeast" of educational reforms -- sorting substance from appearance and tracing first level organizational effects of legislated requirements take natural precedence over the treacherous tasks of identifying independent contributors to ultimate pupil outcomes (Grossman, Kirst, & Posner, 1986). And third and most daunting, dropout statistics are of notoriously low quality just about wherever they are kept.

One purpose of this essay and analysis is to present the central themes of recent research on tests required for high school graduation that are related to the possibility of induced school-leaving. Another is the reverse -- to present graduation testing-relevant observations found in research on school dropouts. Some of the implications of these discussions take the form of hypotheses for future inquiry; others describe impediments to particular courses of research. In a final section, a brief analysis of published 50 state data complements this discussion and serves to illustrate how far we are from generally available adequate statistics describing either large scale reforms or school completion behavior.

I. Dropout Themes and Graduation Testing

The Process Nature of Dropping Out. I argued in a previous paper (Catterall, 1987) that for many youngsters, dropping out of school is the result of a process of disengagement which extends over most of their in-school lives. Many youngsters lack integration into the academic life of the school by the time they reach high school and frequently much earlier. More than one observer has suggested that, for this reason, dropout preventive measures would be much more effective if concentrated on early educational development. We know that large numbers of students leave school before their senior years and that dropping out occurs over all of the high school grades. Steinberg, Blinde, and Chan (1984) point out that some youngsters, particularly Hispanics, do not even show up for 9th grade.

An obvious implication is that affixing a test at the end of the school experience may be expected to have very marginal effects on school continuation decisions. For many students, a test that must be passed for graduation is clearly irrelevant -- they are gone long before the required test is a consideration. This sort of behavior, with an insidious twist involving the role of teachers, was found by Madaus and Greaney (1985) in their study of tests required to graduate from the 6th grade in Ireland. They found teachers retaining many weaker students in earlier grades so that failure rates on the tests would be

suppressed. They also found that many of the retainees became old enough to leave school (and did so) before they were confronted by the graduation test.

The Centrality of Academics in Dropping Out. Studies which model comprehensively for the relationships between student characteristics, behaviors, and performances and dropping out of school consistently assign large and significant coefficients to measures of academic performance (Eckstrom, Goertz, Pollack, & Rock, 1986; Rumberger, 1986). In fact, academic performance usually stands out as the strongest predictor of school continuation and curtailment. This suggests that graduation tests could play a pivotal role in dropout decisions for some students. Some who would have graduated in the absence of the test may not because they score below established cut-off scores. Some inititial failers will also fail on subsequent attempts to pass the test. Some initial failers may drop out in order to avoid the humiliation of additional failure should they try again. Also in their Ireland study, Madaus and Greaney (1985) found that many students chose to leave school rather than risk failure on the graduation test. No comparable studies of American experiences have been reported.

The Complexity of Dropout Behavior. At the same time that academic performance can be identified as central to dropout decisions, these decisions remain complex and are subject to multiple influences in the lives of individual

youngsters, let alone across samples. Along with academic performance, social interactions with peers at school, negative or positive interactions with teachers and school officials, paid work away from school, student-family interactions at home, and decisions to marry or have children all seem to bear on dropout decisions. Within this complex web, we would expect a test for graduation to have marginal effects. And if the effects of graduation tests are small, their detection will require a carefully constructed model and a large sample of subjects.

Poor Dropout Data. Research on the impact of minimum competency tests will confront problems in the widespread unavailability, spotty nature, and incomparability of record keeping on dropouts (Hammack, 1986). School districts typically log the destinations of known leavers, but often the largest category is composed of departed students whose status is unknown. An example related to the interactions of students with graduation tests could proceed as follows: a portion of the initial test takers, say 25 percent, fail the graduation test at its first administration in the 10th or 11th grade. Half of this group never appear for a subsequent administration of the test. On the one hand, the disappearance of test failers is of interest to an analysis of relations between the test and dropping out. On the other hand, most schools and districts will not be able to say with any precision where the departed test failers are. They may be dropouts, they may be registered

at another school, they may be enrolled in a high school equivalency test or certificate program. In short, existing data on dropouts at the school or district level do not generally allow for such analyses. It appears that original and longitudinal studies of student cohorts would have to be undertaken if the effects of graduation tests are to be deciphered cleanly.

II. Graduation Testing Themes and Dropping Out

Low Hurdles Established by Graduation Tests. Many analysts (Haney & Madaus, 1978; Serow, 1984a) have noted that the typical competency test required for high school graduation pegs the needed performance at about the 9th grade level, and that the tests focus on basic verbal and quantitative skills rather than higher order reasoning. As a result, most students pass the tests, at least eventually, and often with intervening remediation. Actual diploma denials typically amount to about 1 percent (Serow, 1984a).

An implication of the low hurdle apparently set by graduation tests and high ultimate passing rates is that the tests may not prove very intimidating in general, and may be substantially unrelated to dropping out.

Higher Failure Rates for Minorities. That only 1 percent of students in general are denied diplomas masks the problems that minority youngsters, particularly blacks in extant studies, have with graduation tests. Serow (1984b) notes that few states report successes and failures by student groups individually.

In his study of North Carolina's graduation testing program, black students received one fourth of the state's high school diplomas in 1980, but also accounted for three fourths of all diploma sanctions. Serow also reports passing rates for blacks versus whites on initial attempts to pass graduation tests in four states for which he could obtain data. The differences typically exceeded 20 percent. For example, 85 percent of white youngsters in California passed competency tests for graduation in 1980, while only 65 percent of blacks succeeded. In North Carolina, 95 percent of whites passed the mathematics portion of the 1979 graduation test on an initial attempt while only 73 percent of blacks passed. Serow and Davies (1982) report that in North Carolina 4.4 percent of blacks, 1.8 percent of other minorities, and only 0.5 percent of whites were denied diplomas on the basis of test performance.

An obvious implication of these figures is that the tests present more of a hurdle to minorities, particularly blacks based on known data, but almost certainly to other minorities who typically fare less well in school. We also know from numerous studies that black and Hispanic dropout rates exceed those of white youngsters. For example, in the recent High School and Beyond Survey, 19.1 percent of Hispanics, 17.2 percent of blacks, and 13 percent of whites dropped out between the spring of their sophomore year and spring of their senior year

(National Center for Education Statistics, 1985). Any study of graduation tests and dropping out will have to be sensitive to the ethnic backgrounds of it subjects.

Differential Testing Systems. Graduation testing systems vary on a number of dimensions -- the nature of the state mandate or authorization, the definition of the competencies tested, the nature of the administration system, the specific consequences of failure and passage, and the dissemination of testing results (Baratz, 1980). Systems entail tests of differing nature and length, differing calendars for initial testing and retesting, differing remediation programs for test failers, varying numbers of retest opportunities allowed, and so on. Research on the impacts of graduation tests on school continuation decisions is probably misconceived if it hopes to find pervasive (or perhaps any) effects of graduation tests per se. More promising courses of research include the investigation of specific models of graduation testing to examine how they work and how each may influence school continuation decisions.

Another promising focal point for research is the responsiveness of schools to youngsters who are at risk of failing graduation tests or who have already failed them. Researchers examining school dropout behavior (e.g. Fine, 1986) have noted that some schools appear to act remorselessly to push certain students out, or at least quietly allow them to find the door. A graduation test could serve these ends most conveniently.

Some schools may go to great lengths to encourage passage by academically marginal youngsters; some may tacitly or actively discourage success. These behaviors may vary according to test system, according to type of student population, or according to personal preferences and characteristics of school personnel.

The Reputation of a Graduation Test. The reputation gained by an implemented competency test for graduation may influence early school dropout decisions. A test may become known for its difficulty and for its likelihood of identifying large numbers of failures. For some students, this may add to a collection of influences suggesting that high school is not worth continuing. The institution of a graduation test, along with other augmented standards for graduation, may signal students that the school now means business when it comes to academic learning (Jaeger, 1982). A student strategy of getting by and exchanging forbearance from disruption for passing grades from their teachers and ultimate graduation may no longer work (Sizer, 1984). An alternative will be leaving school.

Student Opinions of Graduation Tests. Most analyses of required graduation tests and minimum competency tests more generally focus on the development and nature of the tests, the distributions of scores, and how teachers and school decisionmakers use test information. A survey of student opinions about mandatory graduation tests (in reading, writing, and mathematics) in three California high schools was conducted as a part of the Stanford in the Schools Study (Haertel,

Ferrara, Korpi, & Prescott, 1984). The student sample was randomly selected and distributed across various ethnic backgrounds -- two thirds Caucasian and one third minority (10 percent Hispanics, 7 percent Asian Americans, 2 percent blacks, and 15 percent members of other groups). Since the sample was drawn from students in grades 9 through 12, it included some who had not taken the graduation tests, some who had passed them, some who had failed, some who had passed on second tries -- in short the respondents represented a full range of experiences with the tests.

Of the nearly 600 students surveyed, almost 70 percent generally agreed that graduation tests were a worthwhile endeavor, usually because they felt that the tests covered minimal but essential skills for the high school graduate. Only eleven percent of the students had negative opinions of the enterprise and the most frequently raised objections were that the tests were too easy or that they were invalid measures of essential knowledge.

The balance of favorable opinion regarding the graduation tests was higher for those who passed the tests on the first or second try (77 and 72 percent favorable respectively). Among students who had tried but not yet passed the tests, 43 percent still supported the testing program and only 27 percent expressed opposition. Finally, among all students, only 1 percent of those generally supporting graduation tests felt that they penalized or labeled low achievers, and only 4 percent of

students opposing or expressing neutrality about the tests indicated this opinion.

It appears from this limited study that these tests for graduation (which are developed locally by school districts in California) are considered fairly legitimate by students themselves. The authors did not address the question of induced school leaving -- their sample would have missed students who had failed tests and dropped out. Nonetheless, nothing in their reported data suggests that the tests pose a great threat to students, even to those who have failed them once. And students did not express high levels of concern about the effects of the tests on their fellow students.

III. Summing Up the Implications

Reported research and analysis concerning competency tests required for graduation and concerning dropping out of school do not point to unambiguous hypotheses regarding the effects of graduation tests on early school leaving. The most salient indications that can be drawn from the above discussion are these:

1. The effects of a graduation test are likely to be marginal across the general student population -- dropping out of school is a complex process that is influenced by a large number of factors in the lives of students. The presence or absence of a test required for graduation cannot be expected to overwhelm the

remaining factors and would not be expected to rival the influence of most known contributors to dropping out.

2. Where certain populations, particularly minorities, have experienced high failure rates on initial examinations and retests, the test could prove to be a factor in pupil decisions to abandon the diploma as a goal.

3. Existing state and school district data are not likely to be helpful in uncovering the influence of graduation tests on dropping out. Too little is known generally about students who no longer attend school, most particularly whether they are dropouts or not. Original data generation and tracking of pupils constitute a potentially productive alternative. A more exploratory study could ask school professionals (counselors, deans, test coordinators) and students about the effects of the tests from their vantage points. Even this more limited strategy has not been undertaken with questions of dropouts in mind, at least according to our scan of the literature.

4. Different testing systems are likely to have different effects on school continuation decisions. Even an exploratory study should recognize the possibilities and likelihood of variation on this dimension as contributing to variations in impressions of the

effects of tests on dropping out. An exploration should either build planned variation into its design, or investigate identical or at least similar models of graduation testing, depending on its goals.

IV. Are Reported State Graduation Rates Responsive To State Population Characteristics or Policies Such as Tests and Course Requirements for Graduation?

In the remaining section of this paper, we present an analysis of available state level statistics on school completion. We use the 51 states (including the District of Columbia) as units of analysis and conduct a general search for patterns of association between graduation rates and other state population and policy characteristics, and between changes in graduation rates and state characteristics.

The only dropout related statistic that is reported uniformly across school systems in the United States is the school completion rate for 9th graders for each of the 51 states. For these statistics, counts of 9th graders are compared with numbers of diplomas granted three and a half years later. The Center for Statistics in recent years has incorporated into these statistics adjustments for the propensities of students to move across state lines during their high school careers -- a phenomenon that, if left unattended, would render school completion rates rather suspect as indicators of dropping out of school. One result is that we now

have roughly comparable school completion figures for 51 state systems going back to the high school class of 1982 and extending forward to the class of 1985.

Questions explored briefly in this section address these completion (and by implication) dropout data. First, are current graduation rates associated with particular state population characteristics or educational policies (including having graduation tests or added course requirements for graduation)? Second, are particular population characteristics or policies associated with increasing graduation rates over this three year period? And third, are particular population characteristics or policies associated with decreasing dropout rates over this time period?

The Models.

The models tested in these explorations are crude formulations of potential influences on state graduation rates. One model proposes that graduation rates may be responsive to state differences in personal income levels, adult education levels, incidence of poverty among children, percentages of nonwhite minority children, and the presence of a test required for graduation. A variation of the model takes advantage of the three year time spread between 1982 and 1985 during which some states instituted tests and or added course requirements for graduation. Here we look for influences contributing to increased or decreased graduation rates, including the influences of tests and added course requirements.

The Variables.

1.	1985 Graduation Rate	Center for Statistics estimate adjusted for pupil mobility.
2.	1982 Graduation Rate	Center for Statistics estimate adjusted for pupil mobility.
3.	1985-1982 Grad. Rate Change	The difference between 1985 and 1982 graduation rates.
4.	Grad. Rate Increased?	A binary variable coded 1 if graduation rate increased between 1982 and 1985, otherwise 0.
4.	Graduation Test?	A binary variable coded 1 if the state had a graduation test applicable to both 1982 and 1985 classes.
5.	New Grad. test?	A binary variable coded 1 if the state instituted a test for graduation newly applicable to the class of 1985, otherwise 0.
6.	Per capita income	The state's per capita income in 1980.
7.	Median adult education	Median years of education completed by those 18 and older.

8. Poverty Percentage	Percentage of those age 5-17 living in households with poverty level incomes.
9. Minority Percentage	Percentage of those age 5-17 non-Caucasian.
10. Course increase for graduation	Number of courses added to graduation requirements for class of 1985 (and not applicable to the class of 1982).

Across the 51 states, several patterns in these variables are worth noting. Graduation rates for 1985 averaged 70.6 percent, an increase of 0.9 percent over 1982. Thirty five states experienced increases in their graduation rates over this time while 16 had decreases. Nineteen of the states had a graduation test applicable to both the 1982 and 1985 high school classes, while 6 states instituted a required test for graduation that applied to the class of 1985 but not to the class of 1982. Five of the states added courses to the requirements for graduation applicable to the class of 1985 that were not applicable to the class of 1982.

The Analyses

Table 1 displays correlations among the variables listed above for the 51 states. The graduation rates for 1985 and 1982 are very highly correlated (.93). The graduation rates show

virtually no association with added courses for graduation (correlations shown are .01 and .00 for 1985 and 1982 respectively). Graduation rates are negatively correlated with having required tests for graduation and with having instituted a new test for graduation during this period (-.30 to -.38). Graduation rates are also negatively associated with the percentage of poverty youngsters (-.61) and the percentage of minority youngsters (-.63).

(Table 1 about here)

Table 2 presents the results of four linear regressions which probe for robust independent associations between state population and policy characteristics and reported graduation rates.

(Table 2 about here)

Regression I. In this first analysis, the dependent variable is the 1985 reported state graduation rate. The most significant predictor variables are the percentage of poverty youngsters and the percentage of minority youngsters. This finding is consistent with reports of research on dropouts, and on a priori grounds, a causal connection can reasonably be presumed.

A third variable, the number of courses added to graduation requirements, has a positive coefficient which is nearly significant at the $p<.05$ level. This indicates that

states which enacted increased course requirements newly applicable to the class of 1985 tended to have higher graduation rates. In fact, a one course increase is associated with a nearly 2 percentage point higher graduation rate. Despite appearances, this does not adequately address the influence of the advent of course requirements on graduation rates, since this must be accomplished by associating added requirements with changed graduation rates within states. This topic is addressed in a subsequent model.

Finally in this first regression, the independent association between having a required test for graduation and the graduation rate is negative, while having newly instituted a test for graduation is positively associated with the state graduation rate. Neither of these associations is statistically significant, but since the model addresses the entire population, the signs of the coefficients do describe the independent associations of the variables with reported graduation rates across the 51 states.

Regression II. The second analysis examines the influences of state population and policy characteristics on whether the state's graduation rate increased between 1982 and 1985. The dependent variable is binary, coded 1 if the state's graduation rate increased over this period and 0 if it decreased (no states had equal graduation rates for the two years). Because the dependent variable is binary, an ordinary least squares regression analysis can only hope to discern very robust

influences, and displayed confidence intervals are subject to instability (Aldrich & Nelson, 1984).

In this analysis, adult education level appears to be the most significant and positive predictor of increased graduation rates. Again, since our data describe the population and have not been constructed to make inferences about a population from a limited sample, the signs of the remaining coefficients offer descriptions of patterns across the states that may be of interest, even if the coefficients do not meet customary tests of significance. From the patterns shown in this second model, it appears that states with higher percentages of poverty youngsters improved their graduation rates more than others between 1982 and 1985. Having increased course requirements for graduation shows practically no association with increasing (or decreasing) graduation rates. Both having longstanding graduation tests and having newly instituted graduation tests are negatively associated with graduation rate increases, i.e. they are more common where graduation rates decreased between 1982 and 1985.

Regression III. The third analysis examines the subset of states (N = 35) where graduation rates increased between 1982 and 1985; the amount of positive change in graduation rate is the dependent variable. In these results, none of the predictor variables show robust associations with increases in graduation rates. The presence of a newly instituted graduation test is associated with smaller increases in graduation rates for these

states, although the presence of a longstanding graduation test has a positive association. Added course requirements show negligible influence on reported graduation rates.

Regression IV. The fourth and final analysis examines the subset of states (N = 16) where graduation rates decreased between 1982 and 1985; the amount of negative change is the dependent variable, and positive predictor variable coefficients should be interpreted to indicate less decline in graduation rates. As reported for the previous analysis, none of the predictor variables show robust associations with decreases in graduation rates. In fact, the highest indicated t-statistic for any of the predictor variables is 0.78. Nonetheless, within this small subset of states, states with newly instituted graduation tests had lesser decreases in their graduation rates, as did states with long standing tests required for graduation. States which had increased course requirements for graduation between 1982 and 1985 also had lesser decreases in their graduation rates.

Discussion.

The above analyses report attempts to discern state population and policy characteristics that may influence reported graduation rates. Of central interest are the potential influences of added tests and course requirements for graduation. Do tests or increased course standards appear to have any influence on graduation (or dropout) rates?

Table 3 summarizes the "effects" we found for instituted graduation tests and added courses requirements on the high school class of 1985 when compared to the less-incumbered class of 1982:

TABLE 3

Direction of Influence on Graduation Rates

	Regression I.	II.	III.	IV.
Added test for graduation:	+	-	-	+
Added courses for graduation:	+	+	-	+

The models employed were admittedly crude, relying on aggregate available data that contribute to plausible models of state graduation rates. The results we obtained do not reveal robust relationships between dropping out and increased standards for graduation over the period 1982 to 1985.

A number of limitations apply to this analysis. The models, particularly regressions II. III. and IV., searched for factors which influenced change in graduation rates. All of the variables included, besides the advent of tests and course requirements, were static. A better test of influences for change would also capture how the remaining predictor variables may have changed over the same time period. For example, did minority percentages in the school populations change? Or better yet, what were the minority percentages and parent

education levels of the two classes in question for each state?

Another factor limited the robustness of findings in this analysis. Over the three year period examined, which was selected because of the availability of dropout statistics, only 7 states implemented new tests for graduation and only 5 states implemented added course requirements. Many states which have legislated added course requirements have made them applicable to 1986 and later school classes. We do not yet have data on the percentages of these affected classes who will complete school or drop out.

It is conceivable that fundamental relationships between added standards and graduation rates at the state level may emerge as standards become applicable to future high school classes. It is doubtful that much knowledge will be gained about required exit tests through aggregate analyses because most states that have legislated such tests have now implemented them. The relatively newer standards raising movement will bring changes to future high school classes that may result in broad shifts in school completion rates.

Our conclusion remains that the search for the effects of graduation tests and standards on school completion will have to take place within much finer units of analysis than the states themselves. Such research will have to recognize the realities of standards changes, which can unfold differentially across schools even within systems guided by single policy prescriptions. It is possible that we will never answer the

large questions, do standards or tests force youngsters out of school? Rather, we may benefit only from isolated snapshots of such relationships where researchers choose to concentrate their efforts.

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TABLE 1
50 State Data Correlation Matrix

	85 Grad Rate	82 Grad Rate	Rate Change	Grad Rate +?	Grad Test?	New Grad Test?	Per Cap Income	Adult Educ.	% Pov	% Minor	Added Courses
1985 Graduation Rate	1	.93	.46	.40	-.37	-.33	-.04	.29	-.61	-.64	.01
1982 Graduation Rate		1	.11	.16	-.38	-.30	-.08	.23	-.61	-.63	.00
1982-85 Grad. Rate Change			1	.71	-.08	-.15	.07	.25	-.16	-.22	.03
Grad. Rate Increased?				1	-.09	-.15	-.03	.28	-.09	-.20	.03
Test required for grad?					1	.47	.09	.10	.20	.47	.10
New Grad. Test for 85 Class?						1	.17	-.05	.28	.52	.27
Per capita income							1	.56	-.38	.24	.40
Median Adult Education								1	-.61	-.03	.24
Percent Poverty, Age 5-17									1	.55	.03
Percent Minority, Age 5-17										1	.35
Added courses for Graduation											1

Sources: United States Department of Education, 1984, 1985, 1986, 1987
(Tabulations of Center for Education Statistics Common Core Data, Special Surveys, and Census Bureau Data)

TABLE 2

Reports of Regressions of State Graduation Rates
On Possible Contributing Factors, Including Added Tests and
Added Course Requirements for Graduation

Dependent Variable	I. 1985 Graduation Rate		II. Graduation Rate Incr 1985 over 1982? Y/N		III. Subset: Positive Change in Grad Rate		IV. Subset: Negative Change in Grad Rates	
N States	51		51		35		16	
Indep. Variable	Coeff.	(t stat.)	Coeff.	(t stat.)	Coeff.	(t stat.)	Coeff.	(t stat.)
Graduation Test?	-2.43	(-1.18)	-3.93	(-0.25)	0.54	(0.49)	0.65	(0.45)
New Grad Test?	1.17	(0.36)	-3.14	(-0.13)	-2.28	(-1.25)	0.57	(0.28)
Per Capita Income	-1.18	(-1.80)	-2.78	(-0.55)	0.34	(1.63)	0.03	(0.03)
Adult Education Level	6.68	(1.03)	1.50	(3.02)‡	-1.87	(-0.57)	6.29	(0.78)
Poverty Percentage	-0.63	(-2.02)‡	4.58	(1.93)#	0.13	(0.75)	0.12	(0.41)
Minority Percentage	-0.18	(-2.38)‡	-1.01	(-1.77)	-0.05	(-1.09)	-0.02	(-0.43)
Course Increase for Grad	1.88	(1.99)‡	0.03	(0.46)	-0.05	(-0.12)	0.39	(0.31)
CONSTANT	16.73	(0.20)	-18.19	(-2.89)	18.93	(0.45)	-81.92	(-0.84)
F	df (7,43)	8.58‡‡	df(7,43)	1.75	df(7,27)	0.61	df(7,8)	0.47
R Squared		0.58		0.22		0.13		0.29

‡‡ significant at p<.01 ‡ significant at p<.05 # significant at p<.10